Summary

Title: Assessment of EMG Activity of Selected Muscles during Compensatory Exercises for Volleyball Players

Aim of the thesis: The aim of the thesis is to compare muscle activity of two different types of resistance – the manual resistance of the practitioner and the Thera-Band resistance – during diagonal one flexion and extension patterns PNF for upper extremity. And then consider whether there is a possibility to use the method of PNF in a combination with Thera-Band during volleyball players' compensatory exercise.

Methodology: The thesis has a character of a case study. Using surface electromyography on five probands, we recorded the electrical activity of musculus biceps brachii, musculus deltoideus pars posterior, musculus trapezius pars caudalis, and their antagonists. The electrical activity was recorded during diagonal one flexion and extension patterns PNF for upper extremity, using two types of resistance (the manual resistance of the practitioner and the Thera-Band resistance).

Results: During diagonal one extension pattern, the activity of musculus trapezius pars caudalis and musculus deltoideus pars posterior is comparable with the manual resistance of the practitioner and the Thera-Band resistance. Results indicated that m. deltoideus pars posterior and m. trapezius pars caudalis could be strengthen using elastic resistance. An effect of using this method for m. biceps brachii is debatable

Keywords: volleyball, compensatory exercise, Proprioceptive Neuromuscular Facilitation, surface electromyography, Thera-Band, manual resistance